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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/082,207	02/26/2002	Ben-Chuan Du	742433-0026	4668

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NIXON PEABODY, LLP
8180 GREENSBORO DRIVE
SUITE 800
MCLEAN, VA 22102

EXAMINER

NGUYEN, LAM S

ART UNIT

PAPER NUMBER

2853

DATE MAILED: 05/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No	Applicant(s)	
	10/082,207	DU ET AL.	
	Examiner	Art Unit	
	LAM S NGUYEN	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 January 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in 10082207 on 02/26/2002. It is noted, however, that applicant has not filed a certified copy of the 10082207 application as required by 35 U.S.C. 119(b).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki et al. (US 6142598) in view of Naoji et al. (JP 07-125311).

Iwasaki et al. disclose a printing apparatus comprising a print head for scanning over a printing medium, the print head comprising at least one printing element

a timing device for generating a driving timing sequence (FIG. 9, element 107) by shifting a reference timing sequence (FIG. 9, element 105) with a value (FIG. 9, element 103); and

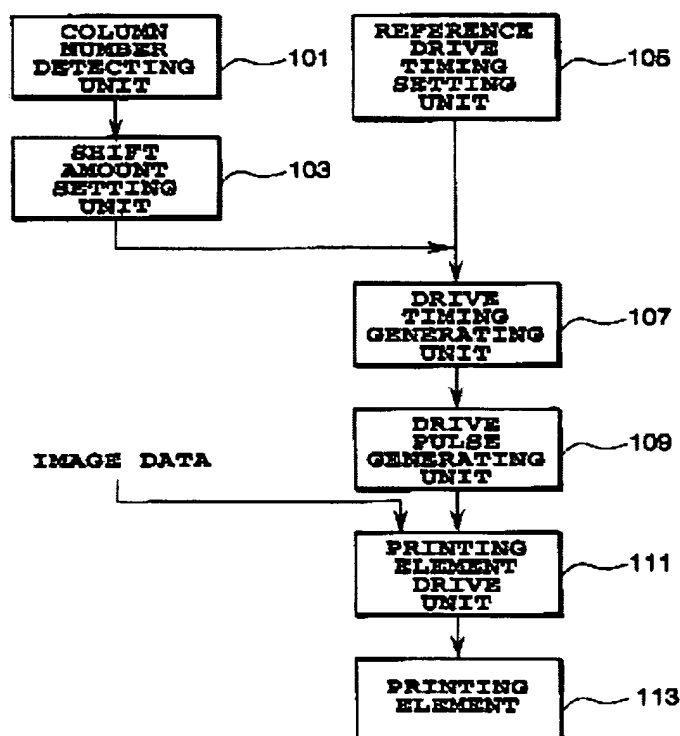
a driving device, in response to said driving timing sequence, for driving said printing element to form an image by printing dots on said printing medium (FIG. 9, element 109);

wherein, with the shifting of said reference timing sequence, a cyclic unevenness of said image is scattered (Abstract).

Referring to claims 2, 10: wherein said timing device generates the value by referencing to a value sequence (FIG. 9: the value sequence is generated by element 103).

Referring to claims 3, 11: wherein said timing device adds the value sequence to said reference timing sequence to generate said driving timing sequence (column 5, line 57-60).

Referring to claims 4, 12: wherein said timing device multiplies said random value sequence to said reference timing sequence to generate said driving timing sequence (column 5, line 12-26).



Referring to claims 7, 8, and 14: wherein said print head is an ink jet head to perform printing and wherein said printing elements are divided into multiple groups, said timing device generating a driving timing sequence for one group of printing elements by shifting the reference timing sequence with an amount (FIG. 5 and FIG 6).

Referring to claim 6: said timing device transmitting the value sequence via a transmission protocol (FIG. 9: element 107 transmits the driving timing sequence to element 109).

Iwasaki et al. do not disclose that the reference timing sequence is shifted with a random value sequence generated by a random sequence generator for providing a driving timing sequence (**Referring to claim 6**).

However, Naoji et al. disclose a method of shifting a reference timing sequence by a random value sequence (paragraph 0036: in term of “random mask pattern”) composed of a set of numbers in random order or value (paragraph 0037: “random number”) (**Referring to claims 5, 13**) is generated by a corresponding random sequence generator (paragraph 0037) to provide a driving timing sequence that is able to prevent a cyclic repetition of unevenness of a printing system (paragraph 0039).

Therefore, it would have been obvious for one having ordinary skill in the art at the time the invention was made to replace the value sequence used for shifting the reference timing sequence to generate the driving timing sequence in the printing apparatus of Iwasaki et al. by the random value sequence as disclosed by Naoji et al. The motivation of doing so is to abolish the periodicity of the concentration nonuniformity in order to gain the high-definition image formation as taught by Naoji et al. (paragraph 0039).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAM S NGUYEN whose telephone number is (703)305-3342. The examiner can normally be reached on 7:00AM - 3:30PM.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RUSS ADAMS can be reached on (703)308-2847. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-3431 for regular communications and (703)305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

LN

April 15, 2003


JUDY NGUYEN
PRIMARY EXAMINER